Ref. No. 3436

ONKYO® SERVICE MANUAL

Integrated Stereo Amplifier
MODEL A-8940

Black and Silver models

UP	230V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

Power Output:	60 watts per channel, min RMS, at 8 ohms, both channels driven from 20 Hz to 20 kHz, with no more than 0.06% THD.	
	2 x 100 watts at 4 ohms, 1 kHz(DIN)	
	2 x 70 watts at 8 ohms, 1 kHz(DIN)	
Total Harmonic Distortion:	0.06% at rated power	
IM Distortion:	0.06% at rated power	
Damping Factor:	40 at 8 ohms	
Frequencey and Response:	15-30,000 Hz ±1 dB	
Input Sensitivity/Impedance:	Phono (MM):	2.5 mV/50 kohms
	Phono (MC):	350 µV/220 ohms
	Tuner/CD/LINE, Video:	150 mV/50 kohms
	Source Direct:	150 mV/50 kohms
	Tape/Play:	150 mV/50 kohms
Output Sensitivity/Impedance:	Tape/Rec:	150 mV/3 kohms (phono)
Phono Overload:	135 mV RMS at 1 kHz, 0.1% THD (MM) (REC)	
Bass Control:	±10 dB at 100 Hz	
Treble Control:	±10 dB at 10,000 Hz	
Selective Tone Control:	±15 dB at 50 Hz/±6 dB at 10 kHz	
Signal to Noise Ratio (IHF-A):	Phono (MM):	80 dB (5 mV input)
	Phono (MC):	70 dB (0.5 mV input)
	Source Direct (CD):	102 dB

General

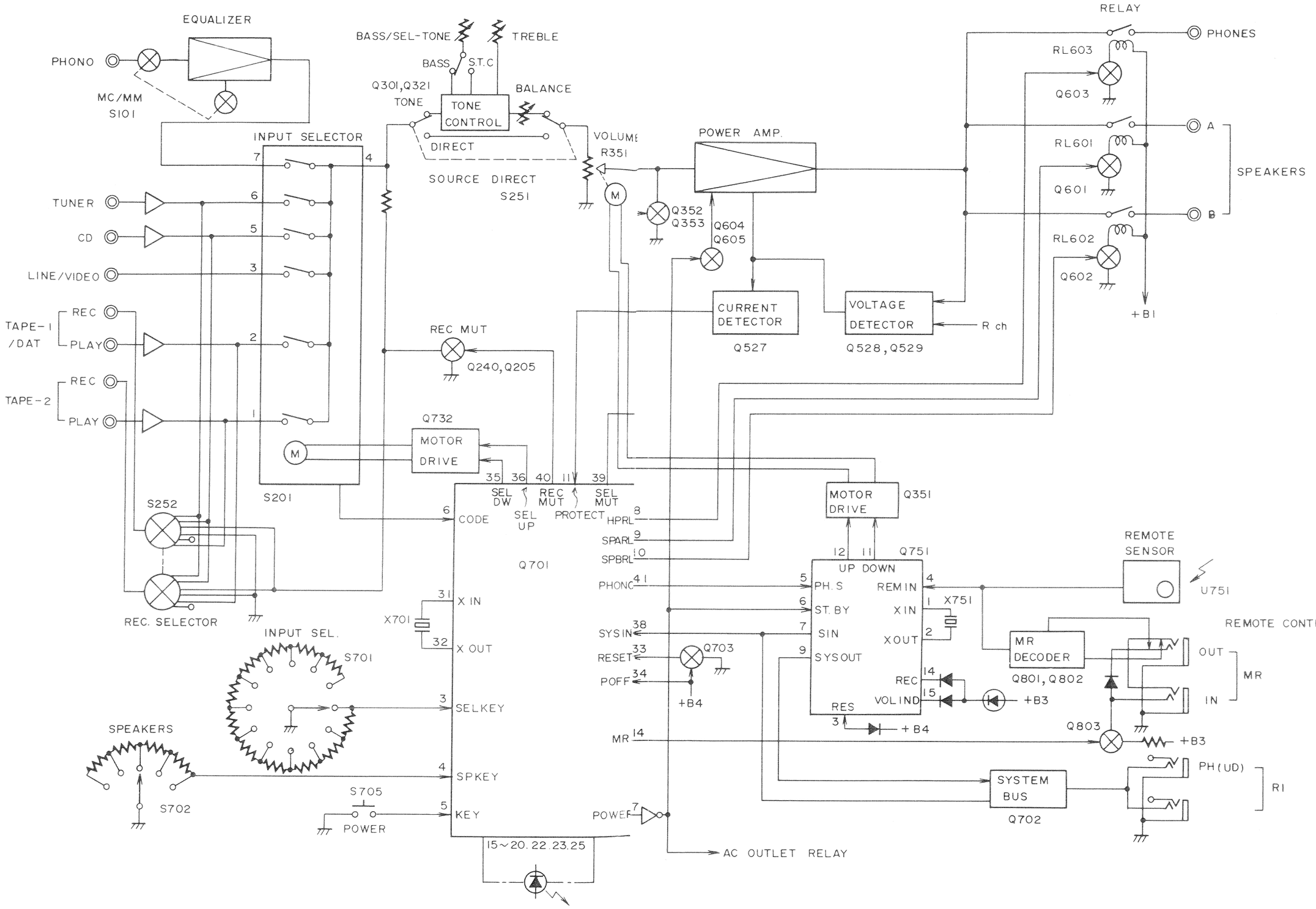
Power Supply:	European models	AC 230V, 50Hz
Dimensions (W) x (H) x (D):	455 x 120 x 330 mm	
	17-15/16" x 4-3/4" x 13"	
Weight:	7.9 kg, 17.4 lbs.	

Remote Control Transmitter RC-242S

Transmitter:	Infrared
Signal range:	Approx. 5 meters, 16ft
Power supply:	Two "AA" batteries (1.5 V x 2)
Dimensions (W x H x D):	64 x 18 x 176 mm
	2-1/2" x 11/16" x 6-15/16"
Weight:	130 grams. 4.6 oz. (including batteries)

Specifications and features are subject to change without notice.

BLOCK DIAGRAM



ADJUSTMENT PROCEDURES

Adjustments and Checking the Protection Circuitry

1. Preparations

1) Place the unit on the workbench. (There should be about 15 mm of space between the base plate of the unit and the work surface.)
2) Set up the unit as follows.
   (1) No load
   (2) No signal
   (3) Volume turned all the way down
   (4) Speaker switch OFF
   (5) Power switch OFF

Note) Check the following points before making adjustments
   (1) The power switch should be OFF.
   (2) The interior of the unit should not be warm.

2. Idling current adjustment

1) Turn the power switch ON and allow the unit to warm up for about 10 minutes.
   (1) Ajust R531 (R532) so that the voltage at test point VCT-ID on the NAAF-4557 circuit board is 9.5mV±3.5mV

NOTE) Semi-fixed resistors enclosed in parentheses ( ) are for the right channel.

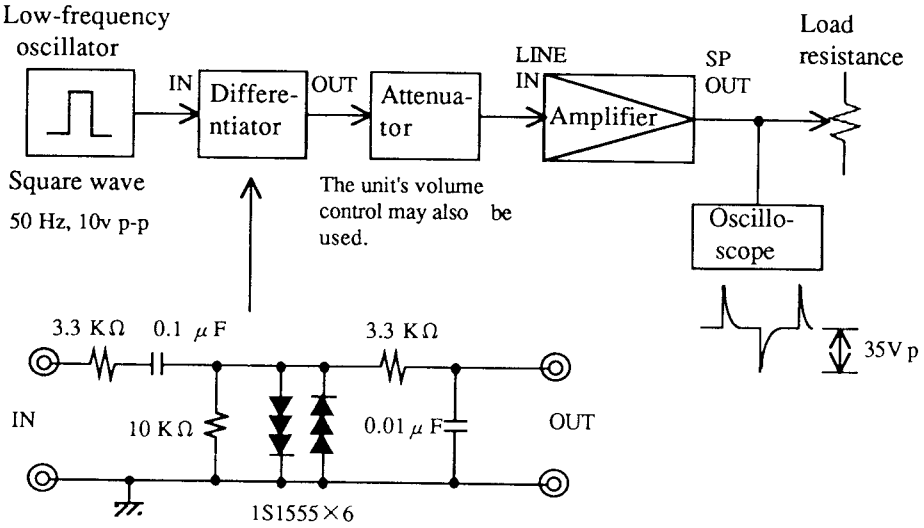
3. Check of operation of protection circuitry

1) Check of operation of protection relay.
   (1) Confirm that the relay turns ON approximately 5 seconds after the power switch is turned ON.
   (2) The relay should turn OFF approximately 0.5 seconds after the power switch is turned OFF.
2) Check of DC detection
   (1) Turn the power on with no load.
   (2) After the speaker relay turns ON, apply DC +1.5V to the CD input terminals. Confirm that the relay turns OFF.
   (3) Confirm that operation is the same as (2) above when an input of DC −1.5V is applied.

Note) Under no circumstances connect a load or short the speaker terminals when performing the above test.

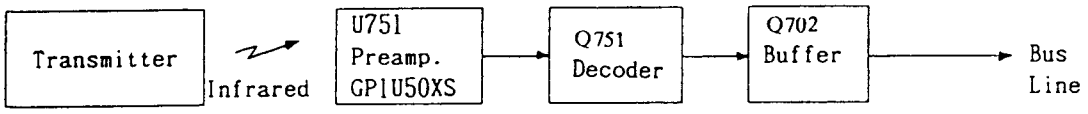
3) Confirmation of current detection operation
   (1) Signal input from the circuit illustrated below with no load.
   (2) Confirm that the speaker relay does not turn OFF even when a 2 ohm load is connected when a peak value of 35Vp is output.
   (3) Next, confirm that when a 1 ohm load is connected the speaker relay switches OFF and ON a couple of times and then stays OFF.

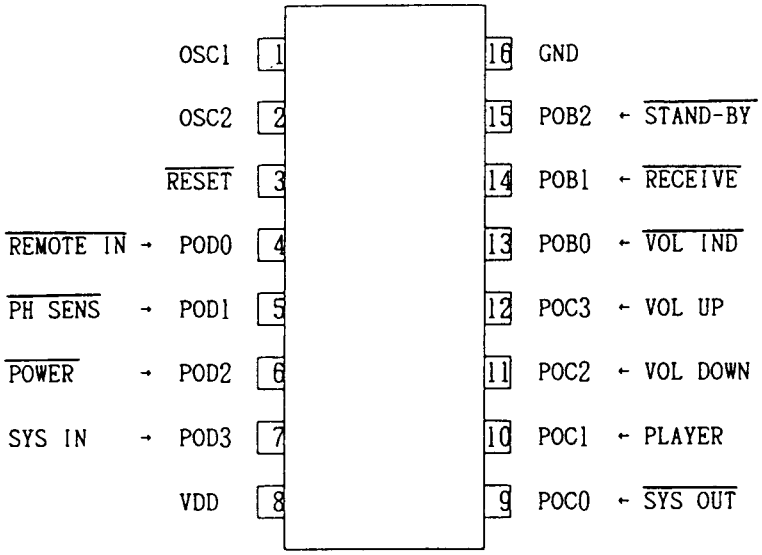
Note) The period before that relay stays OFF should not last for more than 10 second.
Relay OFF status can be canceled by switching the power OFF.



IC BLOCK DIAGRAM

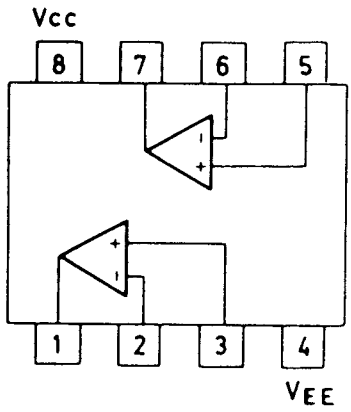
MPD17103CX (Remote Control Decoder)



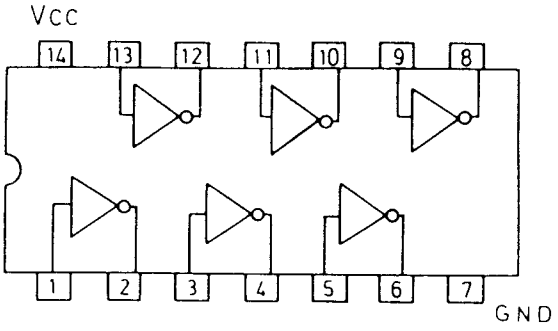


Pin No.	Symbol	Terminal	Description
1	OSC1	OSC	Connect to the 8.00MHz ceramic oscillator.
2	OSC2		
3	RES	$\overline{\text{RESET}}$	System reset terminal. Active low.
4	POD0	$\overline{\text{REMOTE IN}}$	Signal input terminal from preamp. for remote control. Active low.
5	POD1	PHONO SENES	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V_{DD}	+B	Power supply terminal.
9	POC0	$\overline{\text{SYS OUT}}$	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PLAYER	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	$\overline{\text{VOL IND}}$	During the output of VOLUME UP/DOWN, a pulse (⌐T⌋T⌐T⌋T⌋= 250ms) is output. (Not used.)
14	POB1	$\overline{\text{RECEIVE}}$	This is the display output for remote control reception. Output is low when decoded code is being recieved.
15	POB2	$\overline{\text{STAND-BY}}$	STAND-BY indication terminal.
16	V_{SS}	GND	Ground terminal.

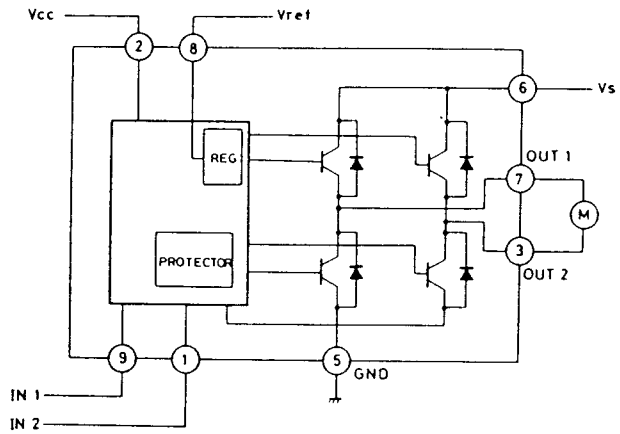
NJM4565DD(OP (O P Amp)
NJM4558LD
MPC4570C



74HCU04P(Hex inverters)



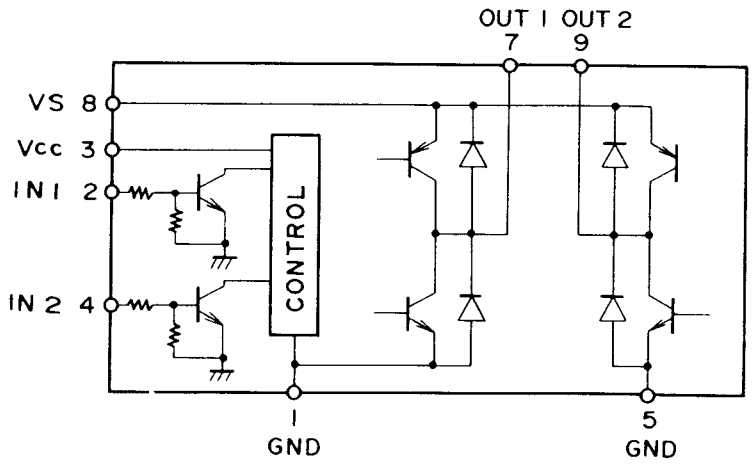
TC7291S(Volume Moter Drive)



INPUT		OUTPUT		MODE
IN 1	IN 2	OUT 1	OUT 2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

CCW: Counter clockwise direction
CW: Clockwise direction

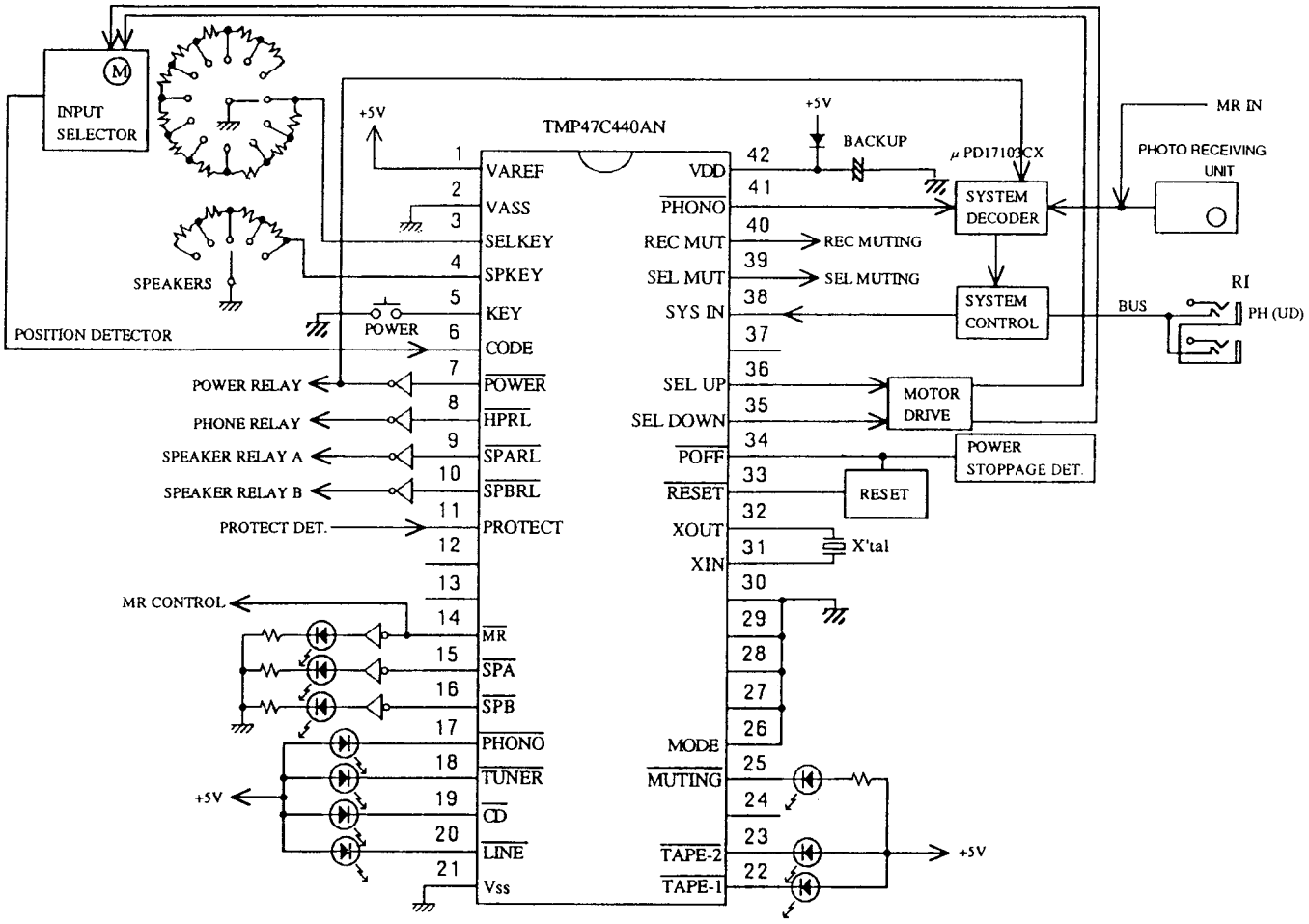
LB1638(Motor Drive)



Tauth Table

IN 1	IN 2	OUT 1	OUT 2	モード
H	L	H	L	NORMAL
L	H	L	H	REVERSE
H	H	L	L	BRAKE
L	L	OFF	OFF	WAIT

TMP47C440AN(Microprocessor)



Pin No.	Symbol	Description
1	VAREF	Analog reference voltage for A/D conversion
2	VASS	Analog reference GND for A/D conversion
3	SELKEY	Input terminal for Switch when changing over Input selector. Through A/D conversion, the Input selector rotation will be detected.
4	SPKEY	Input terminal for Switch when changing over Speaker.
5	KEY	Key entry terminal. Momentary Key will be fetched by A/D conversion.
6	CODE	Input terminal for Detecting position of Rotary switch of Input selector.
7	POWER	Output terminal for Power control. Active "L".
8	HPRL	Output terminal for controlling Head phone relay. "L" when ON.
9	SPARL	Output terminal for controlling Speaker-A relay. "L" when ON
10	SPBRL	Output terminal for controlling Speaker-B relay. "L" when ON.
11	PROTECT	Input terminal for detecting Protect operation. However, "H" 100μF or under shall be ignored.
12	SYS IN	Input terminal for System code.
13	———	Not used.

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>14</td><td>MR</td><td>Output terminal for displaying and controlling MR.
When set Speaker switch at MR; "L".
This output will be output as current condition of MR ever while Power is OFF.</td></tr>
<tr><td>15</td><td>SPA</td><td>Output terminal for displaying Speaker-A.
When set Speaker to be changed-over at A or A+B or selected, Speaker-A by remote control with Speaker set at MR; "L" (Light).</td></tr>
<tr><td>16</td><td>SPB</td><td>Output terminal for displaying Speaker-B.
When set Speaker to be changed-over at B or A+B or selected Speaker-B by remote control with Speaker set at MR; "L" (Light).</td></tr>
<tr><td>17</td><td>PHONO</td><td rowspan="4">Output terminal for Input selector display.
Output of the position currently selected will be "L" (Light).</td></tr>
<tr><td>18</td><td>TUNER</td></tr>
<tr><td>19</td><td>CD</td></tr>
<tr><td>20</td><td>LINE</td></tr>
<tr><td>21</td><td>VSS</td><td>GND terminal.</td></tr>
<tr><td>22</td><td>TAPE-1</td><td rowspan="2">Output terminal for Input selector display.
Output of the position currently selected will be "L" (Light).</td></tr>
<tr><td>23</td><td>TAPE-2</td></tr>
<tr><td>24</td><td>———</td><td>Not used.</td></tr>
<tr><td>25</td><td>MUTING</td><td>Output terminal for Muting display.
Winks in 1 Hz at Muting ON.</td></tr>
<tr><td>26</td><td>MODE</td><td>Input terminal for initialization to change over operation mode.</td></tr>
<tr><td>27</td><td>———</td><td>Not used.</td></tr>
<tr><td>28</td><td>———</td><td>Not used.</td></tr>
<tr><td>29</td><td>———</td><td>Not used.</td></tr>
<tr><td>30</td><td>TEST</td><td>Shipment Test.
To be connected with GND.</td></tr>
<tr><td>31</td><td>XIN</td><td rowspan="2">Terminal for connecting with Ceramic oscillator (4 MHz).</td></tr>
<tr><td>32</td><td>XOUT</td></tr>
<tr><td>33</td><td>RESET</td><td>Input terminal for System reset.</td></tr>
<tr><td>34</td><td>POFF</td><td>Input terminal for Detecting Power suspension.
However, "L" 100μS or under shall be ignored.</td></tr>
<tr><td>35</td><td>SEL DOWN</td><td rowspan="2">UP/DOWN Output terminal for Input selector.
Active "H"
<table>
<tr><th>OPERATION</th><th>SEL UP</th><th>SEL DOWN</th></tr>
<tr><td>STOP</td><td>H</td><td>H</td></tr>
<tr><td>UP</td><td>H</td><td>L</td></tr>
<tr><td>DOWN</td><td>L</td><td>H</td></tr>
</table></td></tr>
<tr><td>36</td><td>SEL UP</td></tr>
<tr><td>37</td><td>———</td><td>Not used.</td></tr>
<tr><td>38</td><td>SYS IN</td><td>Input terminal for System code.</td></tr>
<tr><td>39</td><td>INP MUT</td><td>Muting output terminal for Main amplifier input.</td></tr>
<tr><td>40</td><td>REC MUT</td><td>Muting output terminal for REC output. Active "H"
To be output when changing over Input selector.</td></tr>
<tr><td>41</td><td>PHONO</td><td>Control output terminal for PHONO.
when set Input selector switch at PHONO; "L".</td></tr>
<tr><td>42</td><td>VDD</td><td>Power (+5V) Connecting terminal.</td></tr>
</table>

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD (NAAF-4577, -1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q105	22240191	NJM4565DD
Q201~Q203	22240293	NJM4558LD
	Transistors	
Q101~Q104	2211782 or	2SA991-F or
	2211783	2SA991-E
Q204	2213510 or	DTA114ES or
	2214350	RN2202
Q205,Q206	2213631 or	RN1241-A or
	2213632	RN1241-B
Q501,Q502	2213677 or	2SC3067-G or
	2213678	2SC3067-H
Q505~Q508	2211455	2SA1015-GR
Q509,Q510	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q511,Q512	2211255	2SC1815-GR
Q513,Q514	2211353 or	2SA949-O or
	2211354	2SA949-Y
Q515,Q516	2211633 or	2SC2229-O or
	2211634	2SC2229-Y
Q517,Q518	2212653 or	2SC3421-O or
	2212654	2SC3421-Y
Q519,Q520	2212643 or	2SA1358-O or
	2212644	2SA1358-Y
Q525,Q526	2211732 or	2SC1845-F or
Q528,Q529	2211733	2SC1845-E
Q527	2211792 or	2SA992-F or
	2211793	2SA992-E
Q531,Q532	2211183	2SC1740-R
Q601~Q603	2213650 or	DTD113ZS or
	2214680	RN1226
Q604	2213510 or	DTA114ES or
	2214350	RN2202
Q605	2213290 or	DTC114ES or
	2214230	RN1202
	Diodes	
D101~D104	223163 or	1SS133 or
D501~D504	223205	1SS270A
D601~D603		
D551	224450512	MTZ5.1B, Zener
D911	22380038	RBV602
D912,D913	224451503	MTZ15C
	Coils	
L101,L102	231133	NCH-1188
L501,L502	231176	S-1.3C
	Capacitors	
C101,C102	374721015	100 pF, 50V, Film (TF)
C103,C104	374722224	2200 pF, 50V, Film (TF)
C105,C106	354780479	4.7 μF, 50V, Elect.
C107,C108	374722215	220 pF, 50V, Film (TF)
C111,C112	374728224	8200 pF, 50V, Film (TF)
C113,C114	354724719	470 μF, 6.3V, Elect.
C115,C116	371121134	0.011 μF, 50V, Mylar
C117,C118	371123034	0.03 μF, 50V, Mylar
C119,C120	354780479	4.7 μF, 50V, Elect.
C121,C122	374721224	1200 pF, 50V, Film (TF)
C132,C133	354741019	100 μF, 16V, Elect.
C231~C242	354741009	10 μF, 16V, Elect.
C266		

CIRCUIT NO.	PART NO.	DESCRIPTION
C261,C262	354780339	3.3 μF, 50V, Elect.
C501,C502	393380477	4.7 μF, 50V, Elect.(VX)
C503,C504	374721015	100 pF, 50V, Film (TF)
C507,C508	374721024	1000 pF, 50V, Film (TF)
C509,C510	393322217	220 μF, 6.3V, Elect.(VX)
C511,C512	354780339	3.3 μF, 50V, Elect.
C517~C520	374722234	0.022 μF, 50V, Film (TF)
C525,C526	374724734	0.047 μF, 50V, Film (TF)
C537,C538		
C529~C532	354781019	100 μF, 50V, Elect.
C541~C544	374721024	1000 pF, 50V, Film (TF)
C554	354780479	4.7 μF, 50V, Elect.
C555	354722219	220 μF, 6.3V, Elect.
C605	354741009	10 μ F, 16V, Elect.
C914,C915	3504206	10000 μF, 50V, Elect.
C916,C917	354761019	100 μF, 35V, Elect.
C918,C919	354742219	220 μF, 16V, Elect.
	Resistors	
R527,R528	442522704	27Ω, 1/2W, Metal oxide film
R529,R530	442529104	91Ω, 1/2W, Matal oxide film
R531,R532	5210062 or	N06HR4.7KBD or
	5210216	N06HR5KBD, Semi-fixed
R535,R536	442522714	270 Ω, 1/2W, Metal oxide film
R537,R538	451734794	0.47Ω, 2W, Metal
R539,R540	4500031	0.22Ω, 5W, Metal plate
R543,R544	451630224	2.2 Ω, 1W, Metal
R545,R546	452530224	2.2 Ω, 1/2W, Metal
R547,R548	452530824	8.2 Ω, 1/2W, Metal
R549,R550	452530564	5.6 Ω, 1/2W, Metal
R553~R556	452530224	2.2 Ω, 1/2W, Metal
R601,R602	441627514	750 Ω, 1W, Metal oxide film
R603	442522724	2.7kΩ, 1/2W, Metal oxide film
R911,R913	441623314	330 Ω, 1W, Metal oxide film
R912,R914	441623614	360 Ω, 1W, Metal oxide film
	Switches	
S101	25035631	NPS-142-L587
S201	25030362	NRS-3311-BA, Rotary
	Relaies	
RL601,RL602	25065339	NRL-2P5A-DC24V-46
RL603	25065396	NRL-2P1.25A-DC24-067
	Jumper sockets	
JL301a	25050273	NSCT-9P101
JL501a	25050267	NSCT-3P95
JL901a	25050268	NSCT-4P96
	Terminals	
P101	25045333	NPJ-2PDBL185
P201	25045300	NPJ-6PDBL159
P501	25060125	NTM-8PDMN058
	Bracket	
	27141059	(Ground)

TAPE CIRCUIT PC BOARD (NAAF-4578-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q211,Q212	22240293	NJM4558LD
	Capacitors	
C251~C260	354741009	10 μF, 16V, Elect.
	Terminals	
P251,P252	25045303	NPJ-4PDBL162
	Switches	
S251	25035646	NPS-142-L599
S252	25065382	NSS-22109, Slide
	Jumper sockets	
JL251	25050267	NSCT-3P95
JL252	25050531	NSCT-9P354
JL253	25050529	NSCT-9P352
JL254	25050531	NSCT-9P354

PHONES CIRCUIT PC BOARD (NAAF-4579-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistors	
R571,R572	441623914	390 Ω, 1W, Metal oxide film
	Stereo jack	
P571	25045255	YKB21-5009
	Jumper socket	
JL502	25050267	NSCT-3P95

MICROPROCESSOR CIRCUIT PC BOARD (NADG-4581-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo receiving unit	
U751	24130007	GP1U571X
	ICs	
Q701	22240629	TMP47C440AN
Q731	222755	TC74HCU04P
Q751	22240596	MPD17103CX-542
	Transistors	
Q702	2213510 or	DTA114ES or
	2214350	RN2202
Q703	2211255 or	2SC1815-GR or
	2211183	2SC1740-R
Q704	2213290 or	DTC114ES or
	2214230	RN1202
Q705,Q706	2213510 or	DTA114ES
	2214350	RN2202
Q707,Q708	2213290 or	DTC114ES or
	2214230	RN1202
	Diodes	
D701~D708	223163 or	1SS133 or
D751~D756	223205	1SS270A
D764		
D709	224450562	MTZ5.6B, Zener
D712~D722	225142DX2	SEL2913K-DX2, LED

CIRCUIT NO.	PART NO.	DESCRIPTION
	Osc.element	
X701	3010150	CST4.00MGW
X751	3010154	CST8.00MT
	Capacitors	
C701	3000059	0.047 F, 5.5V, Super
C703,C752	354741009	10 μF, 16V, Elect.
C704	354780109	1 μF, 50V, Elect.
C753	354780339	3.3 μF, 50V, Elect.
	Resistors	
R701	49163103404	10 KΩ×4, Network
R708	49163472404	4.7KΩ×4, Network
	Switches	
S701	25030345	NRS-1112-15SRM, Rotary
S702	25030364	NRSF-115-25SRB, Rotary
S705	25035548	NPS-111-S510
	Holders	
	27190836B	(LED-5)
	27190811	(LED)

TONE CONTROL CIRCUIT PC BOARD (NAAF-4582-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301,Q321	22240050	MPC4570C
	Capacitors	
C301,C302	354780109	1 μF, 50V, Elect.
C325,C326		
C305,C306	354780229	2.2 μF, 50V, Elect.
C323,C324		
C321,C322	374728224	8200 pF, 50V, Film (TF)
C327,C328	374723934	0.039 μF, 50V, Film (TF)
C331,C332	374722234	0.022 μF, 50V, Film (TF)
C391,C392	354780339	3.3 μF, 50V, Elect.
	Resistors	
R315(R316)	5104315	N14RGLC100KMN25Z, Variable
R321(R322)	5104291A	N14RLC100KWT25Z, Variable
R335(R336)		
	Switch	
S321	25035480	NPS-142-L442

VOLUME CONTROL CIRCUIT PC BOARD (NAETC-4583-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q351	22240239	TA7291S
	Transistors	
Q352	2213510 or	DTA114ES or
	2214350	RN2202
Q353,Q354	2213631 or	RN1241-A or
	2213632	RN1241-B
	Capacitors	
C352,C356	354741009	10 μF, 16V, Elect.
	Resistor	
R351(R352)	5104234	N16RGM50KA30F, Variable
	Jumper socket	
JL704	25050282	NSCT-5P110

POWER SUPPLY CIRCUIT PC BOARD (NAPS-4584-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q732	22240358	LB1638
Q931	222780565JRC	78M56
	Transistors	
Q801,Q802	221282 or	DTC144ES or
	2213560	RN1204
Q803	2211255	2SC1815-GR
Q901	2213650 or	DTD113ZS or
	2214680	RN1226
	Diodes	
D801~D805	223163 or	1SS133 or
D901	223205	1SS270A
D931~D934	22380046 or	AM01Z or
D936,D937	22380035	GP104003E
D938	224450512	MTZ5.1B, Zener
	Capacitors	
C711	354741009	10 μF, 16V, Elect.
C811	374724724	4700 pF, 50V, Film
C812	354741009	10 μF, 16V, Elect.
C902	3500065A	0.01 μF, AC400V/125V, Film (IS)
C903	374721034	0.01 μF, 50V, Film (TF)
C931	354742229	2200 μF, 16V, Elect.
C932	354742219	220 μF, 16V, Elect.
C936	354742209	22 μF, 16V, Elect.
C934	354741009	10 μF, 16V, Elect.
C937	374721034	0.01 μF, 50V, Film (TF)
	Cover (Capacitor)	
C902a	27301216	SB-1925A

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistors	
R804	442523304	33Ω, 1/2W, Metal oxide film
R805	442521024	1KΩ, 1/2W, Metal oxide film
R931	452532294	0.22Ω, 1/2W, Metal
R932	442521024	1KΩ, 1/2W, Metal oxide film
R933	442524714	470 Ω, 1/2W, Metal oxide film
R934	442521224	1.2KΩ, 1/2W, Metal oxide film
R935	442521024	1KΩ, 1/2W, Metal oxide film
R936	452530224	2.2 Ω, 1/2W, Metal
	Mini jack	
P801	25045293	HSJ-1003-01-012
P802	25045172	HSJ-1003-01-020
	Relay	
RL901	25065248	NRL-1P15A-DC12-29
	Jumper sockets	
JL701a,JL702a	25050273	NSCT-9P101
JL721a	25050269	NSCT-5P97
JL722a	25050271	NSCT-7P99
	Fuse holder	
F901a	25050065	YSH403T
F902a	25050065	YSH403T
	Heatsink	
Q931a	27160211	RAD-68

POWER SWITCH CIRCUIT PC BOARD (NASW-4585-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitor	
⚠ C901	3500065A	0.01 μF, AC400V/125V, Film (IS)
	Cover (Capacitor)	
⚠ C901a	27301216	SB-1925A [P,W]
	Switch	
⚠ S901	25035550	NPS-111-L512P

LED PC BOARD (NADIS-4586-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diode	
D724	22514DX2	SEL2913K-DX2
	Holder	
	27190811	(LED)

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PARTS LIST OF PACKING

REF. NO.	PART NO.	DESCRIPTION
A851	29052468	Carton box [BLK]
A851	29052470	Carton box [SIL]
A852	29091470	Pad, Left
A853	29091471	Pad, Right
A855	29095378	Protection seet
A856	29100105	620 × 550mm, Poly-vinyl bag
A857	282301 or	Sealing hook or
	282321	Sealing hook
A858	29110071	W=50 mm, Damplon tape
A863	261504	W=30 mm, Paper tape

ACCESSARY BAG ASS'Y

A901	29341764	Instruction manual
	29365020F	Warranty card
	29100094A	Poly-vinyl bag (WARRANTY)
A902	29100097	250 x 350, Poly-vinyl bag
A904	2010200	3.5 Mini cable ass'y
A906	24140242	RC-242S, Remote control unit
A907	3010054	UM-3, Tow batteries

NOTE : [BLK]: Only black models
[SIL]: Only silver models

CHASSIS-EXPLODED VIEW PARTS LIST

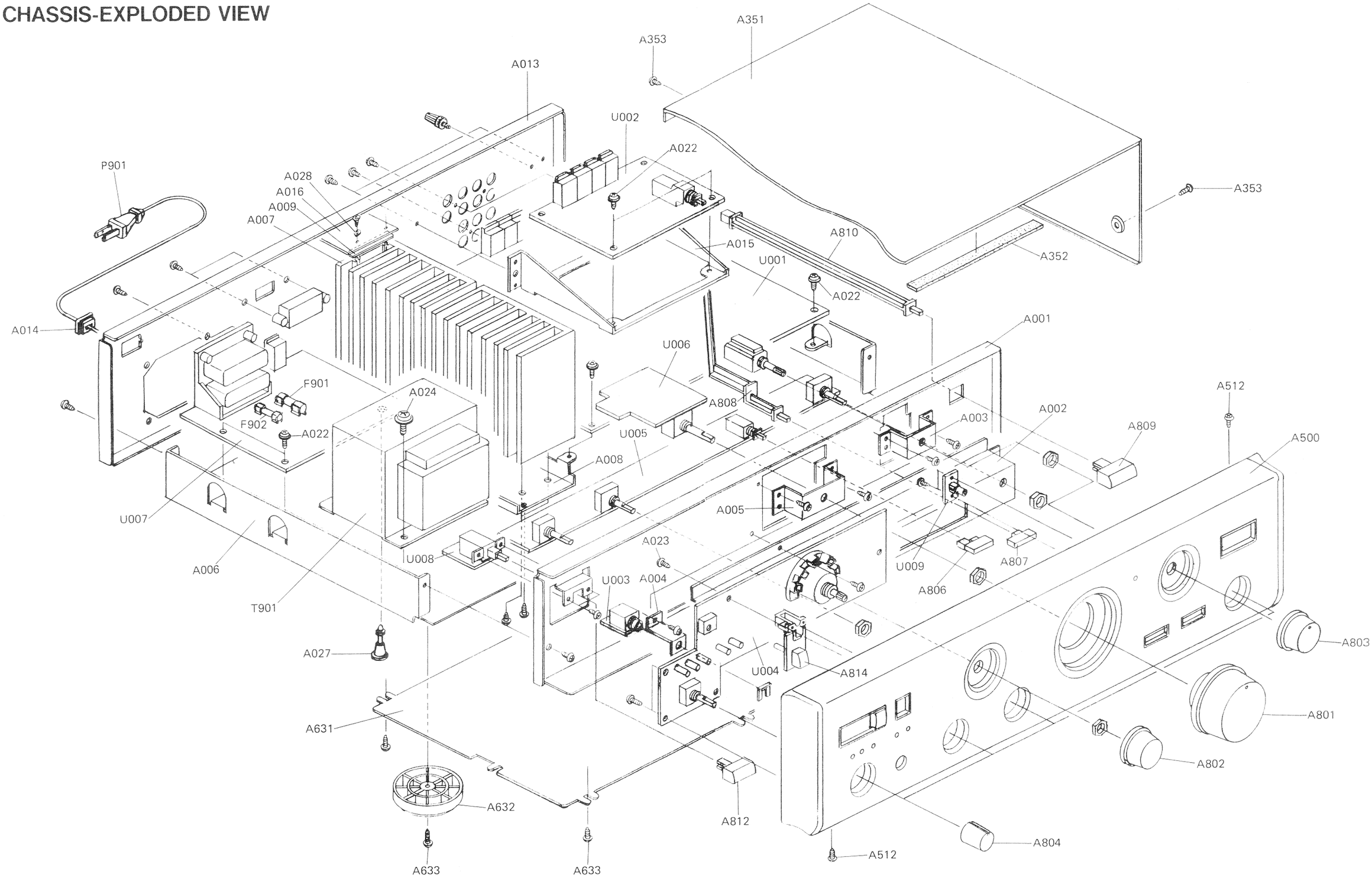
REF. NO.	PART NO.	DESCRIPTION
A001	27110724A	Front bracket
A002	27130701	Bracket (F)
A003	27141567	Bracket (DIR)
A004	27141420	Bracket (HP)
A005	27141569	Bracket (VOL)
A006	27100237	Chassis
A007	27160277B	Radiator
A008	27130652A	Bracket (HE)
A009	27190840A	Holder (HE-L)
A010	27190841	Holder (HE-S)
A013	27121626	Rear panel
A014	27300750	Bushing (CORD)
A015	27130702	Bracket (PC)
A016	27141581	Bracket (HE)
A022	831130088	3TTW+8B, Tap-tight screw
A023	833430080	3TTP+8P(BC), Tap-tight screw
A024	830440089	4TTC+8C(BC), Tap-tight screw
A026	801433	3SMS8WSW + 14B(BC), Special screw (Power transistor)
A027	27190657	KGLS-18RF, Holder
A028	27270333	Spacer
A351	28184484A	Top cover
A352	28140837	t0.9×250 ×10, Cushion
A353	834430088	3TTS+8B(BC), Tap-tight screw
A500	1A396701K	Front panel ass'y [BLK]
(A502)	28135199	Name plate
(A503)	28125226A	End cap (L)
(A504)	28125227A	End cap (R)
(A505)	27267723	Guide (VOL) [BLK]
(A506)	27267814	Guide ass'y (SEL) [BLK]
(A508)	27267812	Guide (SEL-R) [BLK]
(A509)	27267816	Guide (DIR) [BLK]
(A510)	27267714D	Guide (POW) [BLK]
(A817)	28191593-1	Clear plate (RE)
(A818)	28198742	Facet
A500	1A397701k	Front panel ass'y [SIL]
(A515)	27267724	Guide (VOL) [SIL]
(A516)	27267815	Guide ass'y (SEL) [SIL]
(A518)	27267813	Guide (SEL-R) [SIL]
(A519)	27267817	Guide (DIR) [SIL]
(A520)	27267715D	Guide (POW) [SIL]
A512	801230	3STS+8BQ(BC), Tap-tight screw
A631	27170279	Bottom board
A632	27175254	Bottom leg ass'y
A633	834430088	3TTS+8B(BC), Tap-tight screw
A801	28324708	Knob (VOL) [BLK]
A801	28324709	Knob (VOL) [SIL]
A802	28324673	Knob (SEL) [BLK]
A802	28324674	Knob (SEL) [SIL]
A803	28324675	Knob (SEL-R) [BLK]
A803	28324676	Knob (SEL-R) [SIL]
A804	28324252-1A	Knob (TONE) [BLK]
A804	28324252-2	Knob (TONE) [SIL]
A805	28324677	Knob (SP) [BLK]
A805	28324678	Knob (SP) [SIL]
A806	28324323A	Knob (ST) [BLK]
A806	28324324A	Knob (ST) [SIL]
A807	28324251	Knob (SOR) [BLK]
A807	28324251-1	Knob (SOR) [SIL]
A808	27273138A	Joint (M)
A809	28324679	Knob (DIR) [BLK]
A809	28324680	Knob (DIR) [SIL]
A810	27273154	Joint (DIR)
A812	28324140	Knob (POW) [BLK]
A812	28324184	Knob (POW) [SIL]

REF. NO.	PART NO.	DESCRIPTION
A814	28324681A	Knob (S-POW) [BLK]
A814	28324682A	Knob (S-POW) [SIL]
A817	28191593-1	Clear plate (RE)
Q521,Q522	2201703 or	2SC3855-O or
	2201704 or	2SC3855-Y or
	2201706	2SC3855-P, Transistor
Q523,Q524	2201693 or	2SA1491-O or
	2201694 or	2SA1491-Y or
	2201696	2SA1491-P, Transistor
⚠ T901	2300647	NPT-1106P, Power transformer
⚠ P901	253148 or	AS-CEE, Power supply cable or
	253175Y	AS-CEE, Power supply cable
S252a	25030363A	NPS-106-30BU, Rotary switch
⚠ F901	252075 or	2.5A-SE-EAK, Fuse or
	252075CC	2.5A-SE-EAK, Fuse
⚠ F902	252075 or	2.5A-SE-EAK, Fuse or
	252075CC	2.5A-SE-EAK, Fuse
U001	1A388577-1A	NAAF-4577-1A, Main circuit pc board ass'y
U002	1A388578-1A	NAAF-4578-1A, Tape circuit pc board ass'y
U003	1A388579-1	NAAF-4579-1, Phones terminal pc board ass'y
U004	1A388581-1	NADG-4581-1, Microprocessor circuit pc board ass'y
U005	1A388582-1A	NAAF-4582-1A, Tone control circuit pc board ass'y
U006	1A388583-1	NAETC-4583-1, Volume control circuit pc board ass'y
U007	1A388584-1A	NAPS-4584-1A, Power supply circuit pc board ass'y
U008	1A388585-1A	NASW-4585-1A, Power switch circuit pc board ass'y
U009	1A388586-1	NADIS-4586-1, LED pc board ass'y

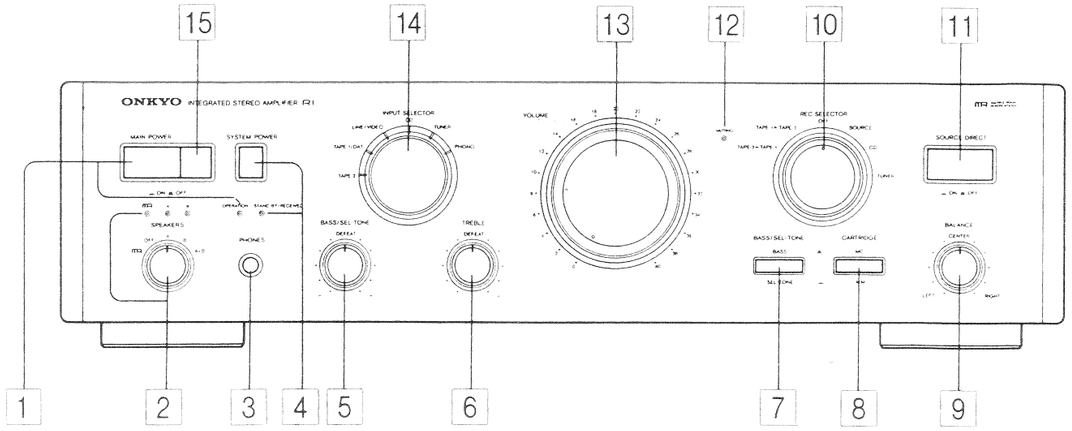
NOTE : [BLK]: Only Black models
[SIL]: Only Silver models

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CHASSIS-EXPLODED VIEW



FRONT PANEL FACILITIES



1 **Main Power Button (MAIN POWER)**
Press this button to set this unit to the standby mode in which power can be switched on and off by the front panel system power button and remote control power button.
A few seconds after power on, the Operation indicator comes on. No sound is heard until this indicator lights. When a problem such as a short-circuiting of the speaker cables, the indicator goes off. In this case, turn the power off immediately, locate the cause of problem and correct it.

2 **Speaker Selector Switch (SPEAKERS)**

MR:	It is possible to switch the speakers using the remote control transmitter.
OFF:	All speakers off – only headphones operating.
A:	Speakers A operating.
B:	Speakers B operating.
A + B:	Both speaker systems A and B operating.

3 **Headphone Jack (PHONES)**
Stereo headphones with a standard binaural plug can be connected here.

4 **System Power Button and Stanby/Received Indicator (SYSTEM POWER and STANDBY/RECEIVED)**
When A-840 is in standby mode, press this button to switch the on/off status of the power supply and the AC outlets on the rear panel. Power can also be turned on by using the remote control power key.
When this indicator is on, power ON can be performed by the remote control transmitter. The signal received from the remote control transmitter will also turn the indicator ON.

5 **Bass Control/Selective Tone Control Knob (BASS/SEL-TONE)**
This control functions as either Bass Control or Selective Tone Control depending on the position of the Bass/Selective tone Button 7. You can adjust to boost or attenuate the bass or selective tone.

Bass Control Knob (BASS)
Turn right to boost or left to attenuate bass. In the DEFEAT position, the bass tone control circuity is completely bypassed.

6 **Treble Control Knob (TREBLE)**
Adjust to boost or attenuate treble.

7 **Bass/Selective Tone Button (BASS/SEL-TONE)**
There are two positions to this push button:

BASS:	In this position, the Bass Control/Selective tone Control 5 functions as the Bass Control.
SEL-TONE:	When this position is selected, the Bass Control/Selective Tone Control functions as the Selective Tone Control.

8 **Cartridge Selector Button (CARTRIDGE)**

MC:	When a turntable with an MC cartridge is being used.
MM:	When a turntable with MM cartridge is being used.

Use the MM position when a step-up transformer is being used with a turntable equipped with an MC cartridge.

9 **Balance Control Knob (BALANCE)**
This is used to control the relative volume level of the left and right speaker systems or headphones.

10 **REC Selector switch (REC SELECTOR)**
This selector selects the source that is recorded.

TAPE-2 ▶ TAPE-1	This position is for dubbing from Tape 2 to Tape 1.
TAPE-1 ▶ TAPE-2	This position is for dubbing from Tape 1 to Tape 2.
OFF	This position is for when you do not want to record or dubbing.
SOURCE	This position records the source selected with Input Selector button 14 or the remote controller.
CD	This position is for recording CDs.
TUNER	This position is for recording broadcasts.

- The CD and TUNER functions will record regardless of the Input Selector Switch's set position.

11 **Source Direct Button (SOURCE DIRECT)**
When you select SOURCE DIRECT, you can obtain a "pure" sound reproduction, bypassing the bass, selective tone, treble, and balance, and using only the volume control. The "SOURCE DIRECT" on the display lights up. This button is also enabled by the SOURCE DIRECT button of the remote control transmitter.

12 **Muting Indicator (MUTING)**
Muting can be performed by the remote control transmitter AUDIO MUTING button. When muting is ON, this indicator will light.

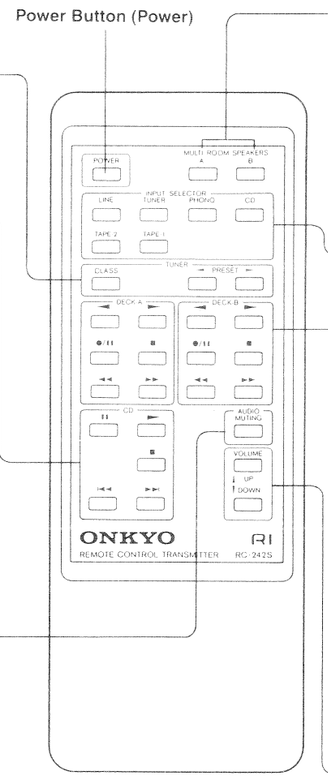
13 **Volume Control Knob (VOLUME)**
Turn clockwise to increase the volume level.
The volume can be adjusted manually and by the remote control transmitter's VOLUME (UP, DOWN) buttons.

14 **Input Selector Switch and Indicators (INPUT SELECTOR)**
This switch is used to select the desired program source. The switch can be turned in either direction without end stops. An indicator lights to show which program has been selected. The switch is also able to be switched directly using the Input Selector buttons on the remote control transmitter.

TAPE-2:	This position is for listening to the tape deck connected to the TAPE-2 terminal.
TAPE-1/DAT:	Turn to this position to listen to the tape deck connected to the TAPE-1/DAT jacks. When recording on tape deck 1, the just-recorded signal can not be monitored even if the tape deck is a 3-head model.
LINE/VIDEO:	Turn to this position to listen to an additional audio source (VCR, TV etc) connected to the LINE/VIDEO jacks.
CD:	Turn to this position to listen to the compact disc player.
TUNER:	Turn to this position to listen to an AM or FM broadcast.
PHONO:	Turn to this position to listen to the turntable.

15 **Remote Control Sensor**
This sensor receives the remote control signals.

Remote Control Transmitter



CD Operation Buttons (CD)
These buttons are used to operate an ONKYO CD player with the RI mark.

▶	: Press this button to play the CD player.
▮▮	: Press this button to pause the CD play back. To resume disc play, press the PLAY button.
■	: Press this button to stop the CD player.
⏮	: Press this button to go back to the beginning of the current track and again to skip back to the previous track.
⏭	: Press this button to skip to the next track.

Audio Muting Button (AUDIO MUTING) and Indicator
This button temporarily switches off the sound from the speaker or headphone. Pressing this button will operate the A-840 audio muting circuit. The audio muting indicator will flash. Pressing the button again or using the POWER button on the remote control transmitter to turn the power on will turn off the audio muting.

Multi Room Speakers Button (SPEAKERS)
If the SPEAKERS switch is moved to " MR ", these speakers can be turned on and off using the remote control transmitter. When the button is pressed, the speakers are turned on and when the button is pressed again, the speakers are turned off. If you want to select both speakers, marked A and B, press button A first and then press button B.

Input Selector Buttons (LINE, TUNER, PHONO, CD, TAPE-2, TAPE-1)

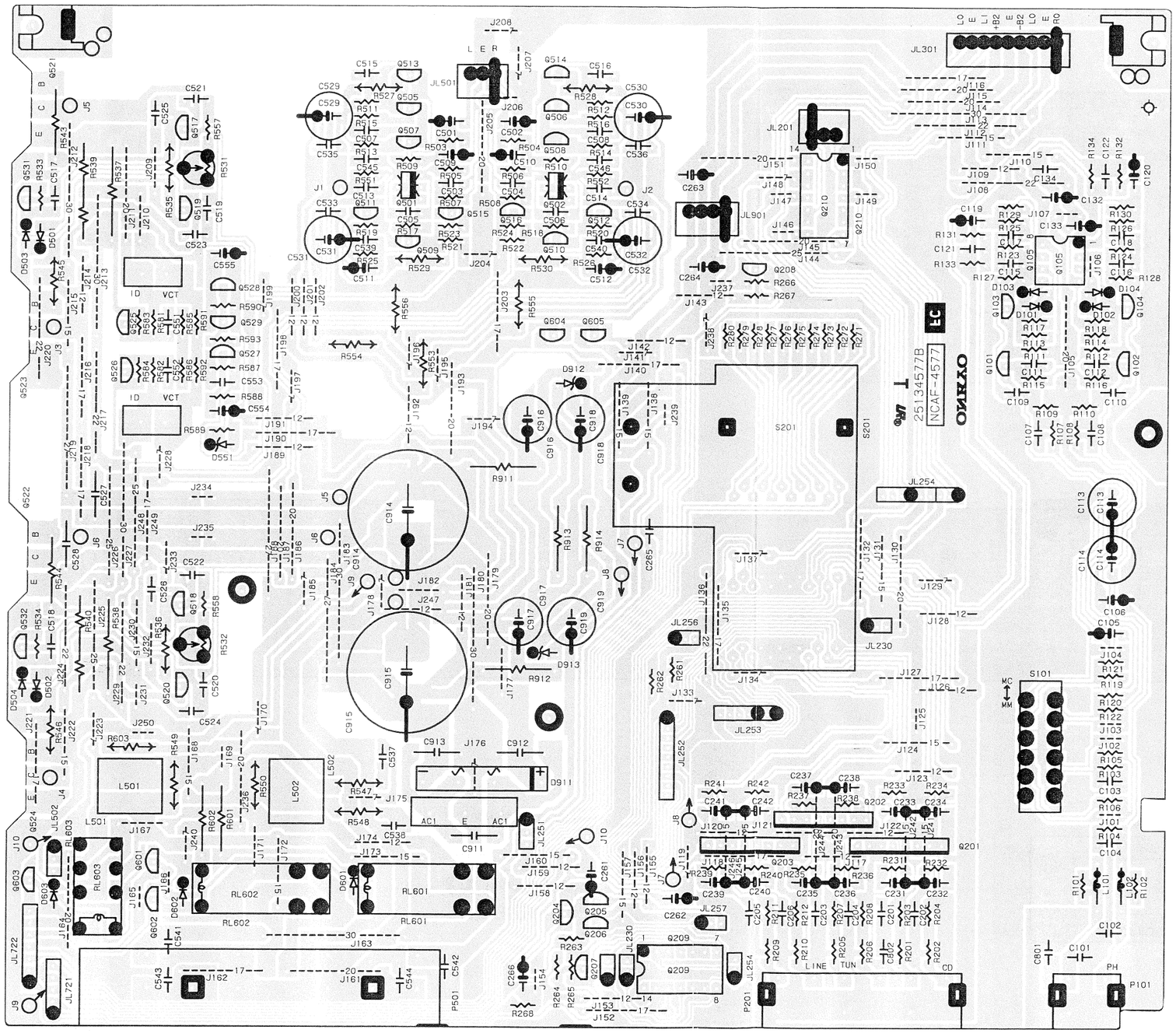
Tape Operation Buttons (DECK-A, DECK-B)
These buttons control ONKYO double cassette tape decks that can be remote controlled. Use the DECK-B buttons to control single cassette tape decks with the RI mark.

●/▮▮	: When this is pressed, the recording stand-by mode is entered.
◄	: The tape plays, moving from right to left, or, in the recording stand-by mode, recording begins.
■	: Interrupts all operations.
►	: The tape plays, moving from left to right, or, in the recording stand-by mode, recording begins.
◄◄	: Fast forward from right to left.
►►	: Fast forward from left to right.

Volume Buttons (UP, DOWN)

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

NAAF-4577


J208
L E R
J207
JL501
Q513
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C515
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C502
R503
R504
Q507
Q508
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LO E LI +B2 E -B2 LO E RO
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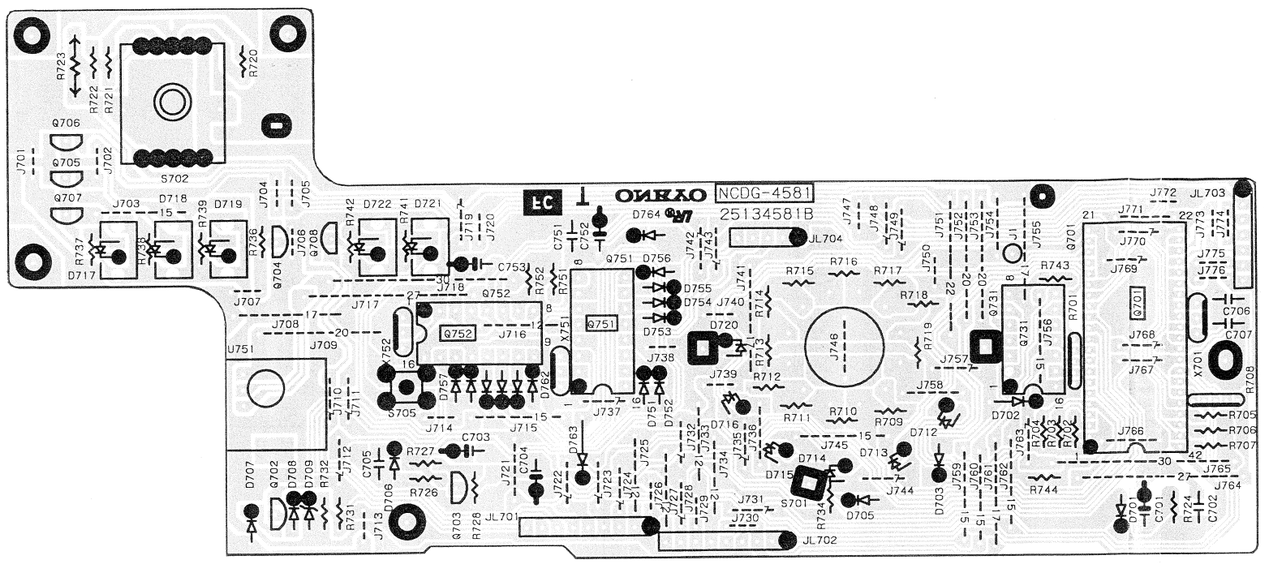
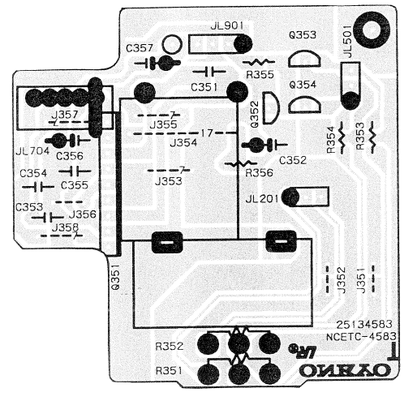
NADG-4581



NAETC-4583



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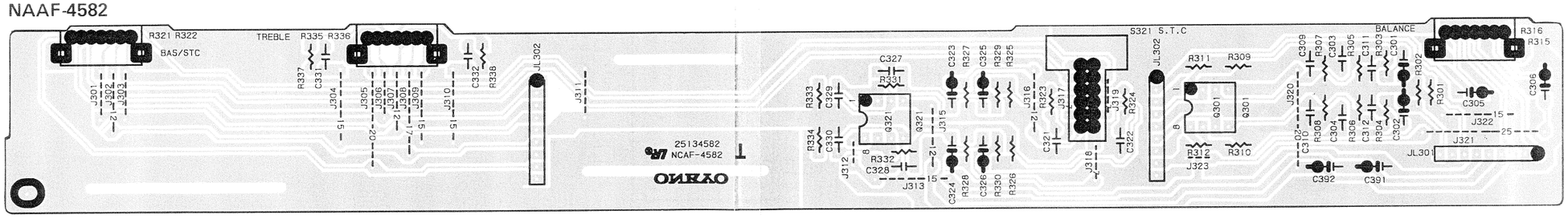
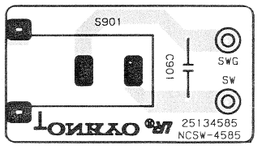
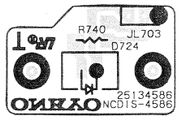


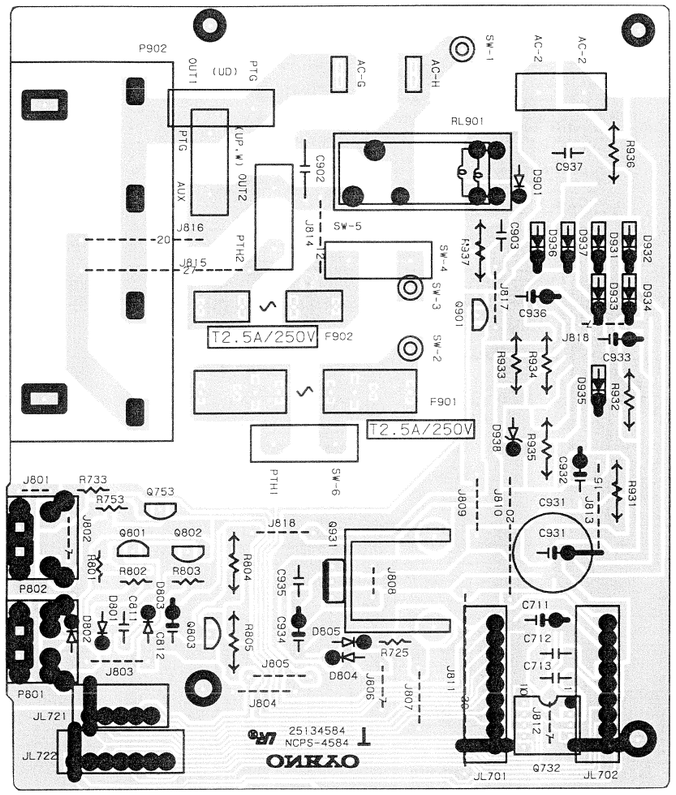
NASW-4585



NADIS-4586



NAPS-4584



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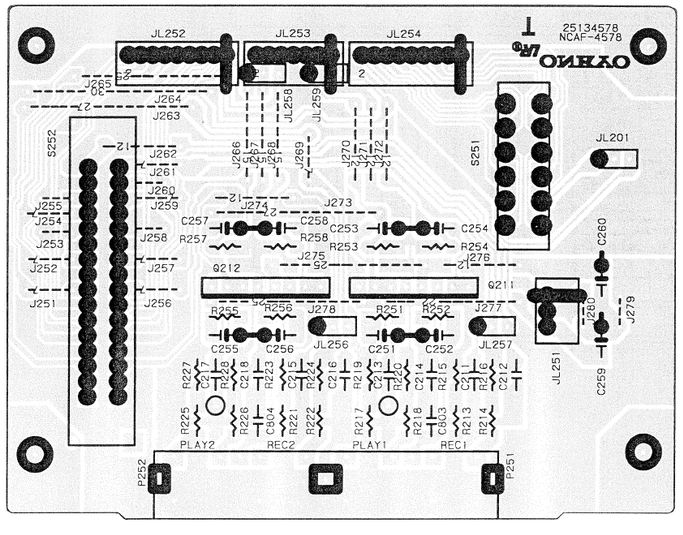


PRECAUTIONS

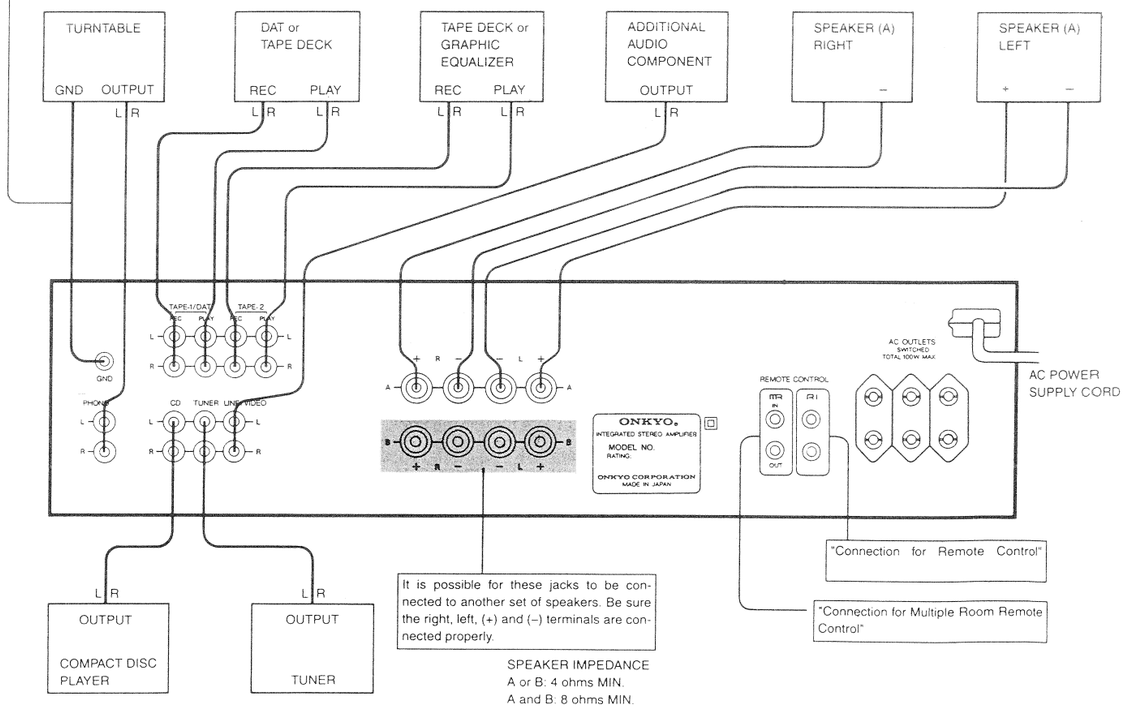
1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F901,F902	252075 or 252075CC	2.5A-SE-EAK, Primary fuse

SYSTEM CONNECTION

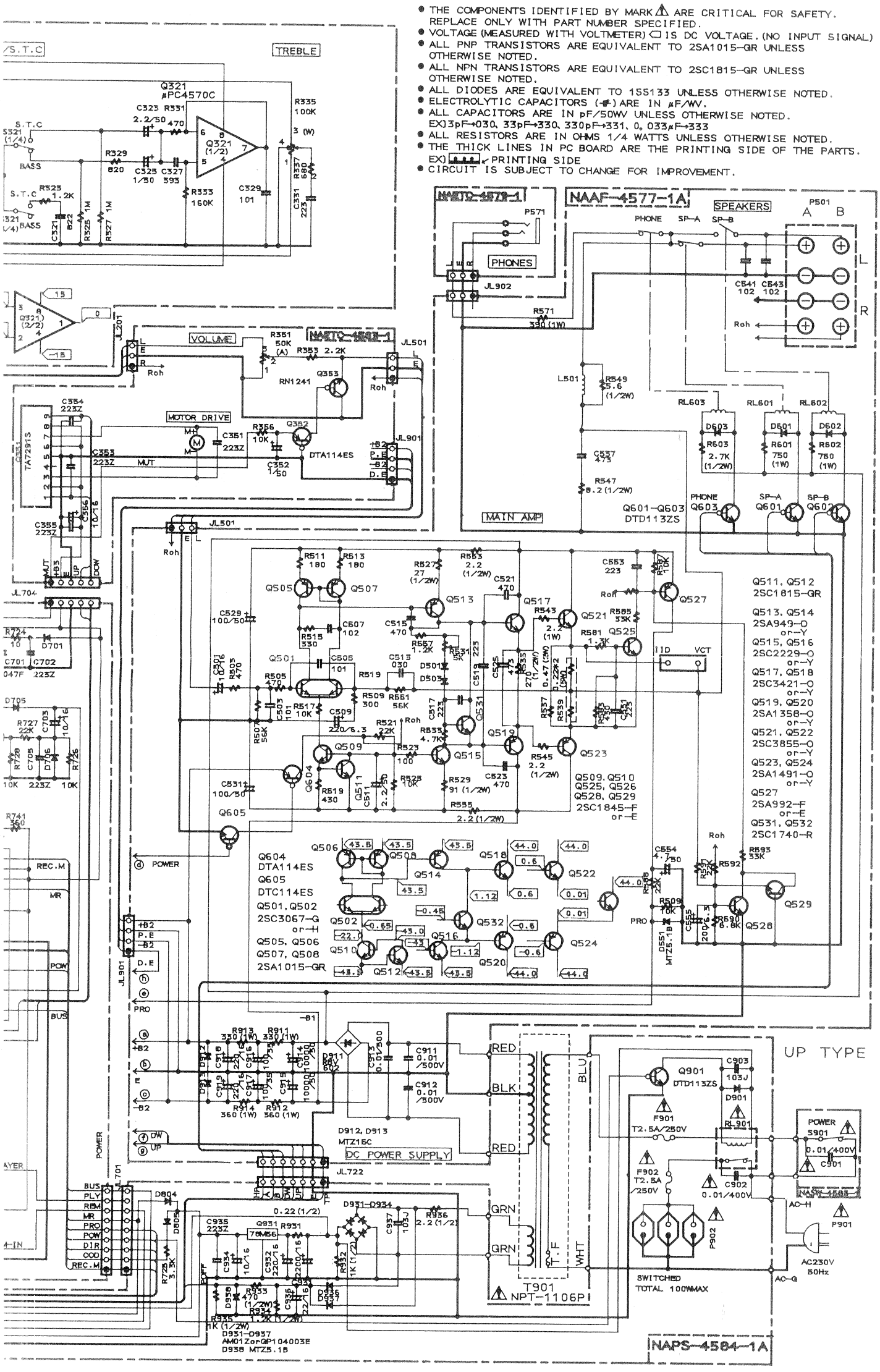
Ground connection is not necessary for turntables without ground leads.



SCHEMATIC DIAGRAM

NOTE

- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) ☐ IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (-#-) ARE IN μF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED. EX) 3pF→030, 33pF→330, 330pF→331, 0.033μF→333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS. EX) ▭ ↙ PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.



ONKYO CORPORATION